# PORTAL

USPTO

Search:   ⦿ The ACM Digital Library   ○ The Guide

"server" "true topology" "routing" "OSPF" "PNNI" "IS-IS" "peer    **SEARCH**

## THE ACM DIGITAL LIBRARY

ᴵ⁺ Feedback  Report a problem  Satisfaction survey

Terms used: **server true topology  routing  OSPF  PNNI IS IS peer routing**

Found **60,929** of **205,978**

Sort results by     [relevance          ▼]

Display results     [expanded form  ▼]

⬥ Save results to a Binder
❓ Search Tips
☐ Open results in a new window

Try an Advanced Search
Try this search in The ACM Guide

Results 1 - 20 of 200     Result page: **1**  2  3  4  5  6  7  8  9  10     next
Best 200 shown                                                   Relevance scale ☐ ⬛ ⬛ ⬛ ⬛

**1**  **Load-sensitive routing of long-lived IP flows**                              ⬛
Anees Shaikh, Jennifer Rexford, Kang G. Shin
August 1999 **ACM SIGCOMM Computer Communication Review , Proceedings of the
conference on Applications, technologies, architectures, and protocols
for computer communication SIGCOMM '99**, Volume 29 Issue 4
**Publisher:** ACM Press

Full text available: 🅰 pdf(1.57 MB)     Additional Information: full citation, abstract, references, citings, index terms

> Internet service providers face a daunting challenge in provisioning network resources,
> due to the rapid growth of the Internet and wide fluctuations in the underlying traffic
> patterns. The ability of dynamic routing to circumvent congested links and improve
> application performance makes it a valuable traffic engineering tool. However,
> deployment of load-sensitive routing is hampered by the overheads imposed by link-state
> update propagation, path selection, and signaling. Under reasonable protoc ...

**2**  **BANANAS: an evolutionary framework for explicit and multipath routing in the internet**  ⬛
H. Tahilramani Kaur, S. Kalyanaraman, A. Weiss, S. Kanwar, A. Gandhi
August 2003 **ACM SIGCOMM Computer Communication Review , Proceedings of the
ACM SIGCOMM workshop on Future directions in network architecture
FDNA '03**, Volume 33 Issue 4
**Publisher:** ACM Press

Full text available: 🅰 pdf(585.15 KB)    Additional Information: full citation, abstract, references, citings

> Today the Internet offers a single path between end-systems even though it intrinsically
> has a large multiplicity of paths. This paper proposes an evolutionary architectural
> framework "BANANAS" aimed at simplifying the introduction of multipath routing in the
> Internet. The framework starts with the observation that a path can be encoded as a
> short hash ("PathID") of a sequence of globally known identifiers. The PathID therefore
> has global significance (unlike MPLS or ATM labels). This property a ...

**3**  **Stable internet routing without global coordination**                          ⬛
Lixin Gao, Jennifer Rexford
December 2001 **IEEE/ACM Transactions on Networking (TON)**, Volume 9 Issue 6
**Publisher:** IEEE Press

Full text available: 🅰 pdf(179.23 KB)    Additional Information: full citation, abstract, references, citings, index terms

The Border Gateway Protocol (BGP) allows an autonomous system (AS) to apply diverse local policies for selecting routes and propagating reachability information to other domains. However, BGP permits ASs to have conflicting policies that can lead to routing instability. This paper proposes a set of guidelines for an AS to follow in setting its routing policies, without requiring coordination with other ASs. Our approach exploits the Internet's hierarchical structure and the commercial relationsh ...

**Keywords**: Border Gateway Protocol (BGP), Internet, convergence, protocols, routing

**4**   Stable Internet routing without global coordination

Lixin Gao, Jennifer Rexford

June 2000 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 2000 ACM SIGMETRICS international conference on Measurement and modeling of computer systems SIGMETRICS '00**, Volume 28 Issue 1

**Publisher**: ACM Press

Full text available: pdf(1.07 MB)   Additional Information: full citation, abstract, references, citings, index terms

The Border Gateway Protocol (BGP) allows an autonomous system (AS) to apply diverse local policies for selecting routes and propagating reachability information to other domains. However, BGP permits ASes to have conflicting policies that can lead to routing instability. This paper proposes a set of guidelines for an AS to follow in setting its routing policies, without requiring coordination with other ASes. Our approach exploits the Internet's hierarchical structure and the commercial rel ...

**5**   On inferring autonomous system relationships in the internet

Lixin Gao

December 2001 **IEEE/ACM Transactions on Networking (TON)**, Volume 9 Issue 6

**Publisher**: IEEE Press

Full text available: pdf(241.72 KB)   Additional Information: full citation, abstract, references, citings, index terms

The Internet consists of rapidly increasing number of hosts interconnected by constantly evolving networks of links and routers. Interdomain routing in the Internet is coordinated by the Border Gateway Protocol (BGP). BGP allows each autonomous system (AS) to choose its own administrative policy in selecting routes and propagating reachability information to others. These routing policies are constrained by the contractual commercial agreements between administrative domains. For example, an AS ...

**Keywords**: Border Gateway Protocol (BGP), Internet, protocols, routing

**6**   Internet routing over large public data networks using shortcuts

Paul F. Tsuchiya

October 1992 **ACM SIGCOMM Computer Communication Review , Conference proceedings on Communications architectures & protocols SIGCOMM '92**, Volume 22 Issue 4

**Publisher**: ACM Press

Full text available: pdf(1.12 MB)   Additional Information: full citation, abstract, references, index terms

With the emergence of large switched public data networks that are well-suited to connectionless internets, for instance SMDS, it is possible that larger and larger numbers of internet users will get their connectivity from large public data networks whose native protocols are not the same as the user's internet protocol. This results in a routing problem that has not yet been addressed. That is, large numbers of routers (potentially tens of thousands) must be able to find direct routes to ...

**7** Source-oriented topology aggregation with multiple QoS parameters in hierarchical networks .
Turgay Korkmaz, Marwan Krunz
October 2000 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**,
Volume 10 Issue 4
**Publisher**: ACM Press

Full text available: pdf(290.72 KB)   Additional Information: full citation, abstract, references, citings, index terms, review

In this paper, we investigate the problem of topology aggregation (TA) for scalable, QoS-based routing in hierarchical networks. TA is the process of summarizing the topological information of a subset of network elements. This summary is flooded throughout the network and used by various nodes to determine appropriate routes for connection requests. A key issue in the design of a TA scheme is the appropriate balance between compaction and the corresponding routing performance. The contrib ...

**Keywords**: ATM networks, PNNI, QoS-based routing, scalable routing, topology aggregation

**8** On AS-level path inference
Z. Morley Mao, Lili Qiu, Jia Wang, Yin Zhang
June 2005 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 2005 ACM SIGMETRICS international conference on Measurement and modeling of computer systems SIGMETRICS '05**, Volume 33 Issue 1
**Publisher**: ACM Press
Full text available: pdf(154.22 KB)   Additional Information: full citation, abstract, references, index terms

The ability to discover the AS-level path between two end-points is valuable for network diagnosis, performance optimization, and reliability enhancement. Virtually all existing techniques and tools for path discovery require direct access to the source. However, the uncooperative nature of the Internet makes it difficult to get direct access to any remote end-point. Path inference becomes challenging when we have no access to the source or the destination. Moveover even when we have access to t ...

**Keywords**: AS-level path, border gateway protocol, internet routing, network topology

**9** Measuring ISP topologies with rocketfuel
Neil Spring, Ratul Mahajan, David Wetherall, Thomas Anderson
February 2004 **IEEE/ACM Transactions on Networking (TON)**, Volume 12 Issue 1
**Publisher**: IEEE Press

Full text available: pdf(732.86 KB)   Additional Information: full citation, abstract, references, citings, index terms, review

To date, realistic ISP topologies have not been accessible to the research community, leaving work that depends on topology on an uncertain footing. In this paper, we present new Internet mapping techniques that have enabled us to measure router-level ISP topologies. Our techniques reduce the number of required traces compared to a brute-force, all-to-all approach by three orders of magnitude without a significant loss in accuracy. They include the use of BGP routing tables to focus the measurem ...

**Keywords**: communication system operations and management, internet, measurement, network reliability

**10** Hierarchical VP restoration management system for a reliable ATM backbone network

Won-Kyu Hong, Choong-Seon Hong

July 2002  **International Journal of Network Management**, Volume 12 Issue 4

**Publisher:** John Wiley & Sons, Inc.

Full text available: pdf(360.98 KB)   Additional Information: full citation, abstract, references, index terms

This paper proposes a distributed ATM VP PVC restoration framework with the dynamic rerouting schemes in a hierarchical transport network. The rerouting algorithm aims to provide rapid ATM VP PVC restoration in the case of fault or performance degradation in terms of maximization of network resource utilization and satisfaction of the end user's QoS requirement.

**11** Measuring ISP topologies with rocketfuel

Neil Spring, Ratul Mahajan, David Wetherall

August 2002  **ACM SIGCOMM Computer Communication Review , Proceedings of the 2002 conference on Applications, technologies, architectures, and protocols for computer communications SIGCOMM '02**, Volume 32 Issue 4

**Publisher:** ACM Press

Full text available: pdf(1.21 MB)   Additional Information: full citation, abstract, references, citings, index terms

To date, realistic ISP topologies have not been accessible to the research community, leaving work that depends on topology on an uncertain footing. In this paper, we present new Internet mapping techniques that have enabled us to directly measure router-level ISP topologies. Our techniques reduce the number of required traces compared to a brute-force, all-to-all approach by three orders of magnitude without a significant loss in accuracy. They include the use of BGP routing tables to focus the ...

**12** Realistic Large-Scale Online Network Simulation

Xin Liu, Andrew A. Chien

November 2004  **Proceedings of the 2004 ACM/IEEE conference on Supercomputing SC '04**

**Publisher:** IEEE Computer Society

Full text available: pdf(166.29 KB)   Additional Information: full citation, abstract, citings

Large-scale network simulation is an important technique for studying the dynamic behavior of networks, network protocols, and emerging classes of distributed application (e.g. Grid, peer-to-peer, etc.) Large-scale and realism are two critical requirements for network simulations of Grid application studies. Our work here extends previous efforts in three key ways. First, we study networks 100x larger than in our previous studies (20,000 routers). Second, at this scale, we study realistic networr ...

**13** Formal verification of standards for distance vector routing protocols

Karthikeyan Bhargavan, Davor Obradovic, Carl A. Gunter

July 2002  **Journal of the ACM (JACM)**, Volume 49 Issue 4

**Publisher:** ACM Press

Full text available: pdf(350.56 KB)   Additional Information: full citation, abstract, references, citings, index terms

We show how to use an interactive theorem prover, HOL, together with a model checker, SPIN, to prove key properties of distance vector routing protocols. We do three case studies: correctness of the RIP standard, a sharp real-time bound on RIP stability, and preservation of loop-freedom in AODV, a distance vector protocol for wireless networks. We develop verification techniques suited to routing protocols generally. These case studies show significant benefits from automated support in reduced ...

**Keywords**: AODV, Formal verification, HOL, RIP, SPIN, distance vector routing, interactive theorem proving, model checking, network standards, routing protocols

**14** Quality of service based routing: a performance perspective

George Apostolopoulos, Roch Guérin, Sanjay Kamat, Satish K. Tripathi

October 1998 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM SIGCOMM '98 conference on Applications, technologies, architectures, and protocols for computer communication SIGCOMM '98**, Volume 28 Issue 4

**Publisher**: ACM Press

Full text available: pdf(1.72 MB)    Additional Information: full citation, abstract, references, citings, index terms

Recent studies provide evidence that Quality of Service (QoS) routing can provide increased network utilization compared to routing that is not sensitive to QoS requirements of traffic. However, there are still strong concerns about the increased cost of QoS routing, both in terms of more complex and frequent computations and increased routing protocol overhead. The main goals of this paper are to study these two cost components, and propose solutions that achieve good routing performance with r ...

**Keywords**: QoS routing, link state routing, path pre-computation, performance evaluation

**15** Routing: Design principles of policy languages for path vector protocols

Timothy G. Griffin, Aaron D. Jaggard, Vijay Ramachandran

August 2003 **Proceedings of the 2003 conference on Applications, technologies, architectures, and protocols for computer communications SIGCOMM '03**

**Publisher**: ACM Press

Full text available: pdf(285.80 KB)    Additional Information: full citation, abstract, references, citings, index terms

BGP is unique among IP-routing protocols in that routing is determined using semantically rich routing policies. However, this expressiveness has come with hidden risks. The interaction of locally defined routing policies can lead to unexpected global routing anomalies, which can be very difficult to identify and correct in the decentralized and competitive Internet environment. These risks increase as the complexity of local policies increase, which is precisely the current trend. BGP policy la ...

**Keywords**: border gateway protocol (BGP), interdomain routing, path-vector protocols, routing-policy languages, stable paths problem (SPP)

**16** Transport and Routing Protocols: Constrained random walks on random graphs: routing algorithms for large scale wireless sensor networks

Sergio D. Servetto, Guillermo Barrenechea

September 2002 **Proceedings of the 1st ACM international workshop on Wireless sensor networks and applications WSNA '02**

**Publisher**: ACM Press

Full text available: pdf(4.02 MB)    Additional Information: full citation, abstract, references, citings, index terms

We consider a routing problem in the context of large scale networks with uncontrolled dynamics. A case of uncontrolled dynamics that has been studied extensively is that of mobile nodes, as this is typically the case in cellular and mobile ad-hoc networks. In this paper however we study routing in the presence of a different type of dynamics: nodes do not move, but instead switch between active and inactive states at random times. Our

interest in this case is motivated by the behavior of sensor ...

**17** Metarouting

Timothy G. Griffin, João Luís Sobrinho
August 2005 **ACM SIGCOMM Computer Communication Review , Proceedings of the 2005 conference on Applications, technologies, architectures, and protocols for computer communications SIGCOMM '05**, Volume 35 Issue 4
**Publisher:** ACM Press

Full text available: pdf(258.67 KB)   Additional Information: full citation, abstract, references, index terms

There is a shortage of routing protocols that meet the needs of network engineers. This has led to BGP being pressed into service as an IGP, despite its lack of convergence guarantees. The development, standardization, and deployment of routing protocols, or even minor changes to existing protocols, are very difficult tasks. We present an approach called Metarouting that defines routing protocols using a high-level and declarative language. Once an interpreter for a metarouting language is imple ...

**Keywords**: algebraic routing, path algebras, routing protocols

**18** Understanding BGP misconfiguration

Ratul Mahajan, David Wetherall, Tom Anderson
August 2002 **ACM SIGCOMM Computer Communication Review , Proceedings of the 2002 conference on Applications, technologies, architectures, and protocols for computer communications SIGCOMM '02**, Volume 32 Issue 4
**Publisher:** ACM Press

Full text available: pdf(312.33 KB)   Additional Information: full citation, abstract, references, citings, index terms

It is well-known that simple, accidental BGP configuration errors can disrupt Internet connectivity. Yet little is known about the frequency of misconfiguration or its causes, except for the few spectacular incidents of widespread outages. In this paper, we present the first quantitative study of BGP misconfiguration. Over a three week period, we analyzed routing table advertisements from 23 vantage points across the Internet backbone to detect incidents of misconfiguration. For each incident we ...

**19** Modeling methodology A: modeling and security: Evaluation of secure peer-to-peer overlay routing for survivable SCADA systems

Jeffrey J. Farris, David M. Nicol
December 2004 **Proceedings of the 36th conference on Winter simulation WSC '04**
**Publisher:** Winter Simulation Conference

Full text available: pdf(227.27 KB)   Additional Information: full citation, abstract, references

Supervisory Control And Data Acquisition (SCADA) systems gather and analyze data for real-time control. SCADA systems are used extensively, in applications such as electrical power distribution, telecommunications, and energy refining. SCADA systems are obvious targets for cyber-attacks that would seek to disrupt the physical complexities governed by a SCADA system. This paper uses a discrete-event simulation to begin to investigate the characteristics of one potential means of hardening SCADA s ...

**20** Fast accurate computation of large-scale IP traffic matrices from link loads

Yin Zhang, Matthew Roughan, Nick Duffield, Albert Greenberg
June 2003 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 2003 ACM SIGMETRICS international conference on Measurement and modeling of computer systems SIGMETRICS '03**, Volume 31 Issue 1
**Publisher:** ACM Press

Full text available: pdf(594.08 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

A matrix giving the traffic volumes between origin and destination in a network has tremendously potential utility for network capacity planning and management. Unfortunately, traffic matrices are generally unavailable in large operational IP networks. On the other hand, link load measurements are readily available in IP networks. In this paper, we propose a new method for practical and rapid inference of traffic matrices in IP networks from link load measurements, augmented by readily available ...

**Keywords**: SNMP, traffic engineering, traffic matrix estimation

Results 1 - 20 of 200              Result page: **1**   <u>2</u>   <u>3</u>   <u>4</u>   <u>5</u>   <u>6</u>   <u>7</u>   <u>8</u>   <u>9</u>   <u>10</u>     <u>next</u>

Useful downloads: <u>Adobe Acrobat</u>     <u>QuickTime</u>     <u>Windows Media Player</u>     <u>Real Player</u>